THE ABUNDANCE OF TABANIDÆ AS REVEALED BY ONE SEASON'S SURVEY AT BABYLON, N. Y.[1]

By F. S. Blanton

Bureau of Entomology and Plant Quarantine,
U. S. Department of Agriculture

As a student in medical entomology at Cornell University the writer became interested in insect-borne diseases and especially in the vectors of these diseases. This, together with his long interest in the Diptera, actuated him in making the observations recorded in this paper.

Since tularæmia, a widespread disease, has been transmitted by the bites of *Chrysops discalis,* it was thought that other, related flies would probably be able to transmit the disease.

The "Belmont Trail" and bridle path was chosen as an ideal spot for making these observations. The trail consists of a pedestrian's path running nearly parallel to the bridle path and both running along the side of a small stream. The stream, which is traversed by numerous bridges, is approximately four miles long as the crow flies. This stream serves as an outlet for Belmont Lake, which is located in the Belmont Lake State Park and empties into Argyle Lake and thence into the Great South Bay.

On week-ends and holidays enormous crowds visit the lake and numerous people use the trail and bridle path. The presence of great numbers of Tabanidæ, in addition to being annoying may become more serious should tularæmia get established in the native fauna along this trail. For that reason the writer thought it would be advisable to get as much information as possible on the species and the abundance of Tabanidæ in this vicinity.

The stream is rather swift in places, but there are side streams and old stream beds where the water moves very slowly. In many of these places the mud extends to the edge of the stream and sometimes for several feet into the grassy vegetation bordering the

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TABLE 1

A LIST OF THE SPECIES OF TABANIDÆ COLLECTED IN THE SURVEY AT STATION NO. 1

Species	Date collected		Peak of abundance	Total specimens collected
	From—	*To—*	*Date*	*Number*
Chrysops celer O.S.	June 29			1
Chrysops delicatula O.S.	" 22	July 14		6
Chrysops dimmocki Hine	July 7			1
Chrysops flavida Wied.	June 23	July 24	June 28	31
Chrysops geminata Wied.	June 23	July 10	July 1	96
Chrysops montana O.S.	June 24	July 20		7
Chrysops pudica O.S.	July 9	Aug. 5		6
Chrysops sackeni Hine	June 24	July 9		9
Chrysops striata O.S.	July 1	Aug. 16		19
Chrysops univittata Macq.	June 22	Sept. 9	June 28	8,256
Chrysops vittata Wied.	June 28	Aug. 27	July 26	172
Chrysops wiedemanni Kröber	July 16	Aug. 19		17
Tabanus cinctus F.	July 23			1
Tabanus lasiopthalmus Macq.	July 1			1
Tabanus lineola F.	July 9			1
Tabanus nigrovittatus Macq.	July 8			1
Tabanus nivosus O.S.	June 24			1
Tabanus pumilus Macq.	June 29			5
Tabanus sparus Whitn.	July 3			4
Tabanus superjumentarius Whitn.	July 20			1

stream. This affords an ideal breeding place for several species of Tabanidæ found in this vicinity.

A portion of the trail was chosen for making regular surveys, and this portion was designated as station No. 1. The distance covered by this station was approximately 1,200 yards, divided about equally between the pedestrian's path and the bridle path. Each survey lasted 15 minutes. The first survey was made on June 22 and the last one on September 16.

The conditions, including the date, hour, and weather, at the time of the survey were recorded. Since weather conditions apparently do not influence the emergence, these details are not given here.

The specimens were captured by swinging an insect net over the head in such a way that an almost complete figure 8 was described. Specimens of the predominating species, *Chrysops univittata,* were nearly all preserved in liquid but the others were

pinned. Since only the females of the Tabanidæ suck blood, only one male was captured. This was *Tabanus cinctus* F., which has been collected before on the bridle path in this same vicinity. It is found hovering from head height to 10 or 15 feet high.

At station No. 1 a total of 8,636 specimens of Tabanidæ was collected in a total of 38 surveys, of which 8,256 specimens belong to the one species *Chrysops univittata.*

On July 13 a survey was made at station No. 2, where specimens of 120 *Chrysops univittata* were captured in 15 minutes against 15 of all other tabanids caught. This station is adjacent to station 1. On July 24, surveys were made at stations 3 and 4, located on the southern part of the trail. Here the number of *univittata* was completely reversed. There were 4 against 44 of all other species at station 3, and 3 against 32 at station 4.

The species of Tabanidæ, along with such information as the dates for the first and last specimens collected, the peak of abundance, and the total collected are listed in Table 1.

The seasonal distribution of tabanids at station No. 1 is represented graphically by Figure 1.

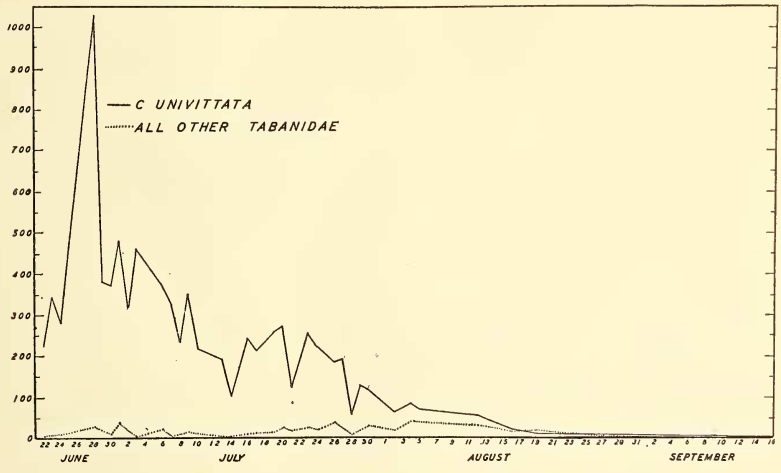

Fig. 1. The seasonal distribution of Tabanidæ at station 1, represented graphically.